

In the Claims

Please replace all prior versions, and listings, of claims in the application with the following list of claims:

Please cancel claims 7 and 23.

1. (Currently amended) A projection screen on which an image is displayed by receiving projection light, comprising:

a substrate;

a light diffusion control portion on a surface of the substrate, having a plurality of convex portions or concave portions; and

an optical thin film on the light diffusion control portion, the optical thin film having convex portions or concave portions having same shapes as that of the convex or concave portions of the light diffusion control portion, the optical thin film reflecting light in a specific wavelength band and transmitting at least visible light other than light in the specific wavelength band;

wherein the optical thin film comprises a dielectric laminate including alternately laminated high-refractive-index layers and low-refractive-index layers, and a thickness of each layer of the dielectric laminate is in a range of 80 to 200 nm.

2. (Original) A projection screen according to Claim 1, wherein the convex portions or concave portions of the light diffusion control portion are formed by processing the substrate.

3. (Previously presented) A projection screen according to Claim 2, wherein the convex portions or concave portions of the light diffusion control portion are designed by an optical simulation so as to determine an angle of light reflection from the optical thin film.

4. (Original) A projection screen according to Claim 3, wherein the convex portions or concave portions of the light diffusion control portion have spherical surfaces.

5. (Previously presented) A projection screen according to Claim 1, wherein the light diffusion control portion comprises: a plurality of spherical beads having a predetermined diameter; and a bead-fixing layer filling spaces between the beads to fix the beads.

6. (Previously presented) A projection screen according to Claim 5, wherein a thickness of the bead-fixing layer is set with respect to the diameter of the beads, thereby determining an angle of reflection from the optical thin film.

7. (Canceled)

8. (Currently amended) A projection screen according to Claim [[7]] 1, wherein the high-reflective-index layers are comprised from materials selected from a group consisting of Nb₂O₅, TiO₂, and Ta₂O₅.

9. (Original) A projection screen according to Claim 8, wherein the low-refractive-index layers comprise SiO₂ or MgF₂.

10. (Original) A projection screen according to Claim 1, further comprising a light absorption layer for absorbing light transmitted through the optical thin film.

11. (Original) A projection screen according to Claim 10, wherein the light absorption layer contains a black paint.

12. (Original) A projection screen according to Claim 11, wherein the substrate functions as the light absorption layer.

13. (Original) A projection screen according to Claim 12, wherein the substrate comprises a macromolecular material.

14. (Previously presented) A projection screen according to Claim 13, wherein the macromolecular material is selected from a group consisting of polycarbonate, polyethylene terephthalate, polyethylene naphthalate, polyether sulfone, and polyolefin.

15. (Original) A projection screen according to Claim 1, wherein the projection light is a laser beam.

16. (Original) A projection screen according to Claim 1, wherein the specific wavelength band includes a red wavelength band, a green wavelength band, and a blue wavelength band.

17. (Currently amended) A method for manufacturing a projection screen on which an image is displayed by receiving projection light, the method comprising the steps of:

forming a light diffusion control portion having a plurality of convex portions or concave portions on a surface of a substrate; and

forming an optical thin film on the light diffusion control portion so as to have convex portions or concave portions having same shapes as that of the convex or concave portions of the light diffusion control portion, the optical thin film reflecting light in a specific wavelength band and transmitting at least visible light other than light in the specific wavelength band;

wherein the optical thin film comprises a dielectric laminate including alternately laminated high-refractive-index layers and low-refractive-index layers, and the thickness of each layer of the dielectric laminate is in a range of 80 to 200 nm.

18. (Original) A method for manufacturing a projection screen according to Claim 17, wherein the light diffusion control portion is formed by processing the substrate.

19. (Previously presented) A method for manufacturing a projection screen according to Claim 18, wherein the light diffusion control portion is designed by an optical simulation so that the convex portions or concave portions of the light diffusion control portion determine an angle of light reflection from the optical thin film.

20. (Previously presented) A method for manufacturing a projection screen according to Claim 19, wherein the convex portions or concave portions of the light diffusion control portion have spherical surfaces.

21. (Previously presented) A method for manufacturing a projection screen according to Claim 17, wherein the step of forming the light diffusion control portion comprises sub steps of: forming a plurality of spherical beads having a predetermined diameter; and forming a bead-fixing layer between the beads to fix the beads.

22. (Previously presented) A method for manufacturing projection screen according to Claim 21, wherein a thickness of the bead-fixing layer is set with respect to the diameter of the beads, thereby determining an angle of reflection from the optical thin film.

23. (Canceled)

24. (Currently amended) A method for manufacturing a projection screen according to Claim [[23]] 17, wherein the high-reflective-index layers are formed from a material selected from a group consisting of Nb₂O₅, TiO₂, and Ta₂O₅.

25. (Original) A method for manufacturing a projection screen according to Claim 24, wherein the low-refractive-index layers are formed of SiO₂ or MgF₂.

26. (Previously presented) A method for manufacturing a projection screen according to Claim 17, further comprising a step of forming a light absorption layer for absorbing light transmitted through the optical thin film.

27. (Original) A method for manufacturing a projection screen according to Claim 26, wherein the light absorption layer contains a black paint.

28. (Original) A method for manufacturing a projection screen according to Claim 27, wherein the substrate functions as the light absorption layer.

29. (Original) A method for manufacturing a projection screen according to Claim 28, wherein the substrate is formed of a macromolecular material.

30. (Previously presented) A method for manufacturing a projection screen according to Claim 29, wherein the macromolecular material is selected from a group consisting of polycarbonate, polyethylene terephthalate, polyethylene naphthalate, polyether sulfone, and polyolefin.

31. (Original) A method for manufacturing a projection screen according to Claim 17, wherein the specific wavelength band includes a red wavelength band, a green wavelength band, and a blue wavelength band.